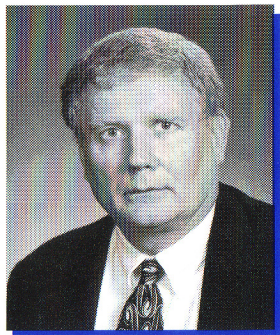


Plasma Arc Waste Destruction System

For almost a decade, researchers at the Carderock Division, Naval Surface Warfare Center have been investigating plasma arc technology as a method to destroy shipboard combustible solid waste. Dr. Eugene Nolting and Jon Cofield developed the Plasma Arc



Dr. Eugene Nolting

Waste Destruction System (PAWDS), which offers a small size, rapid and efficient operation, and the ability to incinerate a wide variety of garbage. Forming an electric arc in a gas—a process that generates temperatures hotter than the sun's surface—creates the plasma used in the system. This allows operation at such an extremely high temperature that combusting materials releases very few pollutants to the environment.

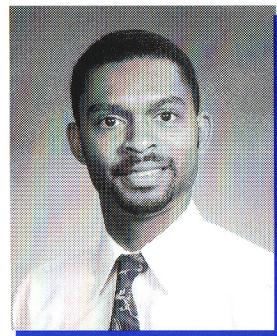
The team was able to move this patented technology forward through both a Cooperative Research and Development Agreement (CRADA) and a licensing agreement with PyroGenesis, Inc., a privately owned company that develops and commercializes customized thermal plasma technologies. PyroGenesis plans to

manufacture and install PAWDS on commercial cruise liners.

The primary beneficiary of PAWDS is the cruise industry, which is subject to stringent pollution control regulations.

International law prohibits ships from indiscriminately dumping trash at sea, so much of the waste must be burned in conventional incinerators or stored for later

removal. Because the incinerators cannot burn plastic, the garbage is spread out on a table and hand sorted. PAWDS eliminates the need to hand sort garbage and store contaminated plastic. Not only are labor costs lowered by the use of PAWDS, but its smaller size results in additional room, which often is used as cabin space by paying customers. Because ships have limited space, this benefit is very important. In addition, the technology produces a waste gas stream that is so clean it can be operated during the daytime without impacting passengers' quality of life.



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